

In re Application of: Ernest GRIMBERG  
 Serial No.: 10/574,462  
 Filed: March 31, 2006  
 Office Action Mailing Date: May 29, 2009

Examiner: Djura MALEVIC  
 Group Art Unit: 2884  
 Attorney Docket: 31363

### REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 63-69, 71-80 and 82-85 are in this Application. Claims 63-69, 71-80 and 82-85 have been rejected under 35 U.S.C. §103. Claims 1-62, 70 and 81 have been canceled in a previous response. Claims 63, 71, 72, 77 and 82 have been amended herewith. New claims 86-90 have been added herewith.

The Application now comprises, after amendments, claims 63-69, 71-80 and 82-90, of which claims 63 and 77 are in independent form.

#### 35 U.S.C. §103 Rejections – Yang in view of Kauer

The Examiner rejected claims 63-64, 66-69, 71, 73-80 and 82-85 as being unpatentable over WO Publication No. 01/388825 by Yang et al. (hereinafter *Yang*), in view of US Patent Application Publication No. 2004/0106211 by Kauer et al. (hereinafter *Kauer*). It is submitted in response that amended independent claims 63 and 77 (and claims 64, 66-69, 71, 73-76, 77-80 and 82-85 dependent thereon) are patentable, in the light of arguments set forth below.

Applicant hereby amends claim 63 to state that the image processor processes the sensor array output signal to obtain an IR image, and that the feedback signal is generated in accordance with a property of the IR image. In consequence, the adjustment between field of view and pixel grouping is dependent upon a property of the IR image, not upon the raw sensor data. Claim 63 now states:

63. An infrared sensor comprising:

a sensor array comprising multiple IR sensors, configured for collecting IR energy from an external scene;

an image processor, configured for processing a sensor array output signal to obtain an IR image and for generating a feedback signal in accordance with a property of said IR image; and

a sensitivity adjuster associated with said sensor array, configured for adjusting between a field of view and a grouping of

In re Application of: Ernest GRIMBERG  
Serial No.: 10/574,462  
Filed: March 31, 2006  
Office Action Mailing Date: May 29, 2009

Examiner: Djura MALEVIC  
Group Art Unit: 2884  
Attorney Docket: 31363

sensing pixels to derive a required image sensitivity, in accordance with said feedback signal. (Emphasis added)

Corresponding amendments have been made to independent claim 77. Support is found *inter alia* on p. 14 line 30 to p. 15 line 7.

*Kauer* presents a chemical sensor which utilizes an electro-optical sensor array. The sensor detects the fluorescence changes produced by the interaction of analytes with sensor elements during irradiation of the sensors with excitation light in the presence of the analytes (*Kauer* para. 0067). Some embodiments of *Kauer* utilize feedback to control operation of the chemical sensor.

Applicant respectfully believes that *Kauer* does not include generating a feedback signal in accordance with a property of an IR image. In *Kauer's* chemical sensor there is no need to produce an image from the sensor output data, nor to analyze properties of such an image. *Kauer* simply analyzes the readout of individual or grouped sensors in the array, in order to determine whether or not a particular chemical is present.

Specifically, although *Kauer* utilizes feedback to control various aspects of the sensor operation, the feedback over the sensor array is minimal. *Kauer* analyzes the sensor output data only to determine which of the array sensors should be used for sampling or detection. *Kauer* para. 140 states:

For enhanced, smart mode operation, the number of array sensors used in sampling or detecting an analyte may be modified, in real-time during either actual sampling or post-sampling data analysis using "on-the-fly" intelligent feedback control. By way of example, if a specific sensor is unresponsive to a particular analyte sample, the corresponding sensing channel may be automatically removed from consideration by a smart sampling or analysis algorithm provides feedback control to the microcontroller.

It is clear from the above that *Kauer's* feedback signal is generated from the outputs of the individual sensors, not from an analysis of an image as claimed herein.

In re Application of: Ernest GRIMBERG  
 Serial No.: 10/574,462  
 Filed: March 31, 2006  
 Office Action Mailing Date: May 29, 2009

Examiner: Djura MALEVIC  
 Group Art Unit: 2884  
 Attorney Docket: 31363

Image properties, such as SNR or contrast, are immaterial to *Kauer*'s the sensor array properties which are being controlled by the feedback signal.

Applicant therefore respectfully believe that neither *Yang* nor *Kauer* teach "processing a sensor array output signal to obtain an IR image and for generating a feedback signal in accordance with a property of said IR image", and that the Examiner's objections are overcome by the present amendments.

It is believed that the dependent claims are allowable as being dependent on an allowable main claim. The specific objections against the dependent claims are therefore not responded to individually.

#### **35 U.S.C. §103 Rejections – Yang and Kauer in view of Hsieh**

Claim 65 has been rejected under 35 U.S.C. §103(a) as being unpatentable over *Yang* and *Kauer* in view of *Hsieh* (NPL – "A New CMOS Circuit Design for the IR FPA..."), hereinafter *Hsieh*. It is submitted that claim 65 is patentable, in light of arguments set forth below.

The Examiner states that *Hsieh* teaches a CMOS based IR FPA, and that it would be obvious to a person skilled in the art to have adapted the CMOS detector as an IR FPA. However, *Hsieh* does not disclose "processing a sensor array output signal to obtain an IR image and for generating a feedback signal in accordance with a property of said IR image". Thus neither *Yang* nor *Kauer* nor *Hsieh*, alone or in combination, teach or suggest all the limitations of claim 65.

#### **35 U.S.C. §103 Rejections – Yang and Kauer in view of Park**

Claim 72 has been rejected under 35 U.S.C. §103(a) as being unpatentable over *Yang* and *Kauer* in view of *Park* (US Patent No. 4,782,396), hereinafter *Park*. It is submitted that claim 72 is patentable, in light of arguments set forth below.

In re Application of: Ernest GRIMBERG  
Serial No.: 10/574,462  
Filed: March 31, 2006  
Office Action Mailing Date: May 29, 2009

Examiner: Djura MALEVIC  
Group Art Unit: 2884  
Attorney Docket: 31363

The Examiner states that *Park* teaches a sensor having an image processor with a contrast detector, and that it would be obvious to a person skilled in the art to have included *Park's* contrast detector with the invention disclosed by *Yang*. However, *Park* does not disclose "processing a sensor array output signal to obtain an IR image and for generating a feedback signal in accordance with a property of said IR image". Thus neither *Yang* nor *Kauer* nor *Park*, alone or in combination, teach or suggest all the limitations of claim 72.

**New Claims**

New claims 86-90 have been added herewith.

New claims 86 and 89 claim that the property used to generate the feedback signal is image SNR. New claims 87 and 90 claim that the property used to generate the feedback signal is image SNR. Support for claims 86, 87, 89 and 90 is found *inter alia* in p. 15 lines 3-4 of the instant specification.

New claim 88 claims the limitations of method claim 82, dependent upon the IR sensor independent claim 63.

In view of the above amendments and remarks it is respectfully submitted that claims 63-69, 71-80 and 82-90 are now in condition for allowance. A prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



Martin D. Moynihan  
Registration No. 40,338

Date: August 25, 2009

**Enclosure:**

- Additional Claims Transmittal Fee